

Just a Sprinkle Makes the Selenium Go Down

While selenium is an essential nutrient for humans and other animals, an excess in drainage water can be toxic to wildlife. So researchers have been looking at using plants that absorb higher-than-average concentrations of selenium, which is a naturally occurring element in Earth's crust. They have done experiments to see whether kale and turnip plants could possibly take up the excess that sometimes builds up in drainage water from irrigation operations. Not only would this reduce selenium concentration in the water by providing a place to store the selenium, but the enriched crops could be used to supplement the diets of livestock raised in selenium-deficient regions.

The scientists found that sprinkling high-selenium irrigation water onto the plants had the best result, because it took advantage of the plants' ability to absorb water droplets and selenium through their leaf openings. Sprinkler-irrigated plants took up about twice as much selenium as those that were surface irrigated and took up selenium only through their roots. *Donald L. Suarez, USDA-ARS George E. Brown, Jr., Salinity Laboratory, Riverside, California; phone (909) 369-4815, e-mail dsuarez@ussl.ars.usda.gov.*

Sheep May Happily Graze on Spurge

More than 5 million acres of the western rangeland in America are now overgrown with leafy spurge, greatly reducing the land's plant diversity and productivity. There's something about this noxious weed that makes it repel cattle, horses, and some sheep. But other sheep don't seem to mind its sticky, milky sap and will graze on it with enthusiasm.

Scientists interested in developing an array of nonchemical, spurge-curbing measures are considering using spurge-browsing sheep to help keep the weed in

check. They've been closely observing the feeding habits of individual animals to single out those that find it most acceptable. They think there may be a genetic code responsible for chemical sensitivity in sheep and other mammals. By identifying these genes, researchers may be able to build flocks of spurge-loving sheep. *Steven S. Seefeldt and Brent W. Woodward, USDA-ARS U.S. Sheep Experiment Station, Dubois, Idaho; phone (208) 374-5306, e-mail sseefeldt@pw.ars.usda.gov, bwoodward@pw.ars.usda.gov.*

Peering Into Papaya's Sex Life

Both people and papayas have specialized chromosomes that carry genes that determine the gender of their offspring. They're called the sex chromosomes and are markedly different from ordinary chromosomes. Joint research with industry and university scientists has yielded the first direct evidence of the evolution of papaya sex chromosomes from others in the fruit's genetic makeup. One particular papaya chromosome resembles a primitive version of the human Y chromosome—perhaps as

it existed 240 to 320 million years ago. It's thought that a similar process occurred in the human genome over millions of years of human sex chromosome evolution.

While sex-chromosome studies may explain inheritance of human conditions such as sickle-cell anemia or hemophilia, similar studies of papaya may shed light on inheritance traits responsible for the fruit's size, shape, and quality. In choosing papaya, consumers seem to prefer an elongated shape that's been linked to a specific combination of genes. Researchers want to find a way to make sure that more commercial papayas inherit this prized attribute. *Paul H. Moore, USDA-ARS U.S. Pacific Basin Agricultural Research Center, Aiea, Hawaii; phone (808) 486-5411, e-mail pmoore@pbarc.ars.usda.gov.*

Ivory Crisp for Nicer Chips

Not just any old potato can be used for making potato chips. For one thing, a chipping potato needs to have a desirable ratio of starch to sugar, and this balance has to persist throughout cold storage while the potatoes await processing. During storage, cool temperatures inhibit sprouting or development of rot or other diseases, but they can also speed the natural conversion of starch to sugar. The higher a potato's sugar content, the more likely that chips made from it will develop dark spots and a burnt flavor during frying.

A new variety, Ivory Crisp, developed from a seedling produced in North Dakota's potato breeding program, was selected and tested in the Northwest Potato Variety Development Program. Round and compact, with a starch-to-sugar ratio that makes for even frying, Ivory Crisp is perfect for chip-making. Tested in Idaho, Oregon, and Washington by state and ARS researchers, it's now ready for growers. *Richard G. Novy, USDA-ARS Small Grains and Potato Research Unit, Aberdeen, Idaho; phone (208) 397-4181, e-mail rnovy@uidaho.edu.*

PEGGY GREB (K10916-2)



Papayas.